WHAT IS CLAIMED:

1. A data transmitting apparatus, wherein

said data transmitting apparatus is a transmitting apparatus acquiring a part of the bandwidth of a transmitting medium before transmission and transmit it and comprising:

bandwidth detection means for detecting a bandwidth of data inputted to said transmitting apparatus;

necessary bandwidth calculation means for calculating a necessary bandwidth for said transmitting medium from said bandwidth outputted from said bandwidth detection means;

transmission condition judge means for comparing an acquired bandwidth acquired from said transmitting medium with said necessary bandwidth outputted from said necessary bandwidth calculation means and judging if said necessary bandwidth exceeds said acquired bandwidth;

transmission control means for outputting said data only while the judge result outputted from said transmission condition judge means indicates that said necessary bandwidth does not exceed said acquired bandwidth; and

transmission means for transmitting said data outputted from said transmission control means to said transmitting medium.

2. A data transmitting apparatus, wherein

said data transmitting apparatus is a transmitting apparatus acquiring a part of the bandwidth of a transmitting medium before transmission and transmit it and comprising:

bandwidth detection means for detecting a bandwidth of data inputted to said transmitting apparatus;

necessary bandwidth calculation means for calculating a necessary bandwidth for said transmitting medium from said bandwidth detected at said bandwidth detection means;

transmission condition judge means for comparing a acquired bandwidth acquired from said transmitting medium with said necessary bandwidth outputted from said necessary bandwidth calculation means and judging if said necessary bandwidth exceeds said acquired bandwidth;

transmission control means for outputting said data only while the judge result outputted from said transmission condition judge means indicates that said necessary bandwidth does not exceed said acquired bandwidth;

bandwidth information adding means for adding said bandwidth outputted from said bandwidth detection means to said data outputted from said transmission control means and outputting only said bandwidth information while said data is not being inputted from said transmission control means; and

transmission means for sending said data outputted from said bandwidth information adding means and added with said bandwidth information or said bandwidth information to said transmitting medium.

3. A data receiving apparatus comprising:

reception means for receiving said data sent from a transmitting apparatus acquiring a part of the bandwidth of a transmitting medium before communication and transmitting only while the bandwidth of data to be transmitted does not exceed the acquired bandwidth to said transmitting medium;

transmission stop detection means for inputting said data received at said reception means and detecting that said transmitting apparatus stops transmission by detecting that said data does not arrive for a designated period; and

processing means for processing to correspond according to the detection result detected at said transmission stop detection means.

4. A data receiving apparatus as recited in claim 3,

wherein:

said processing means directs to stop a recording action to a recording apparatus to record the received data when said transmission stop detection means detects that said transmitting apparatus stops transmission.

5. A data receiving apparatus as recited in claim 3,

wherein:

said processing means directs to stop a reproducing action to a reproducing apparatus to reproduce the received data when said transmission stop detection means detects that said transmitting apparatus stops transmission.

6. A data receiving apparatus comprising:

reception means for receiving said data sent from a transmitting apparatus acquiring a part of the bandwidth of a transmitting medium before transmission, transmitting said data added with bandwidth information while the bandwidth of data to be transmitted does not exceed the acquired bandwidth and transmitting only said bandwidth information when said data bandwidth exceeds the acquired bandwidth to said transmitting medium and added with said bandwidth information, from said transmitting medium;

transmission stop detection means for inputting said data received at said reception means and detecting that said transmitting apparatus stops transmission of said data by detecting that said data does not arrive for a designated period;

bandwidth information separation means for inputting said data received at said reception means and added with said bandwidth information and separating and outputting said bandwidth information added from said data; and

processing means for processing to correspond according to the detection result detected at said transmission stop detection means and at least one of said bandwidth information separated at said bandwidth information separation means.

7. A data receiving apparatus as recited in claim 6,

wherein:

said processing means directs to stop a recording action to a recording apparatus to record the received data when said transmission stop detection means detects that said transmitting apparatus stops transmission.

8. A data receiving apparatus as recited in claim 6,

wherein:

said processing means directs to stop a reproducing action to a reproducing apparatus to reproduce the received data when said transmission stop detection means detects that said transmitting apparatus stops transmission.

9. A data receiving apparatus as recited in claim 6,

wherein:

said processing means directs to change a recording bandwidth to a recording apparatus to record the received data according to bandwidth information supplied from said bandwidth information separation means.

10. A data receiving apparatus as recited in claim 6,

wherein:

said processing means acquires a bandwidth again from a transmitting medium when said transmission stop detection means detects that said transmitting apparatus stops transmission and receives bandwidth information supplied from said bandwidth information separation means.

11. A data receiving apparatus as recited in claim 6,

wherein:

said processing means directs to stop transmission to a transmitting apparatus in at least one case when said transmission stop detection means detects that said transmitting apparatus stops transmission and when bandwidth information supplied from said bandwidth information separation means changes.

12. A data transmitting apparatus, wherein

said data transmitting apparatus is a data transmitting apparatus connected to a transmitting medium in which a propagation delay depending on a connection topology of an apparatus connected to the transmitting medium occurs and which acquires a part of bandwidth of said transmitting medium before transmission and transmits it and comprising:

propagation delay identifier holding means for holding a

propagation delay identifier determined by a connection topology of an apparatus connected to said transmitting medium and expressing propagation delay size of said transmitting medium; and

maximum transmission data size holding means for holding maximum transmission data size expressing maximum size of the data which can be contained in a packet transmitted to said transmitting medium; and wherein

said propagation delay identifier holding means can read and write said propagation delay identifier through said communication; and

said maximum transmission data size holding means can read said maximum transmission data size through said transmitting medium.

13. A data transmission control apparatus, wherein

said data transmission control apparatus is a control apparatus for a transmitting apparatus connected to a transmitting medium in which a propagation delay depending on a connection topology of an apparatus connected to the transmitting medium and having propagation delay identifier holding means for holding a propagation delay identifier which is determined by a connection topology of an apparatus connected to the transmitting medium and expresses propagation delay size of said transmitting medium, and comprising:

analyzing means for analyzing a connection topology of an apparatus connected to said transmitting medium;

identifier determination means for determining said propagation delay identifier according to the analyzing result outputted from said analyzing means; and

identifier setting means for setting said propagation delay identifier determined at said identifier determination means in said propagation delay identifier holding means.

14. A data transmission control apparatus as recited in claim 13, wherein:

said analyzing means provides with a function to judge a connection topology according to the number of maximum relay apparatuses

assumed from the number of apparatuses connected to a transmitting medium.

15. A data transmitting apparatus comprising:

measurement means for measuring a data size arrives in a designated fixed period;

bandwidth determination means for determining a transmission bandwidth from the data size measured at said measurement means; and

transmission means for transmitting according to the transmission bandwidth determined at said bandwidth determination means.

16. A data transmitting apparatus as recited in claim 15, wherein:

said bandwidth determination means adds a data size at a designated rate to the data size measured at said measurement means and determines a transmission bandwidth according to the data size obtained by said adding.

17. A data transmitting apparatus as recited in claim 15, wherein:

said measurement means measures the data size by counting the number of packets having a fixed length arrives in a designated fixed period.

18. A data transmitting apparatus comprising:

judge means for judging if the transmission packets which a receiving apparatus receives from a transmission medium passes the timing to be outputted from said receiving apparatus;

a counter for counting up the value when a transmitting apparatus sends one of said transmission packets and counting down the value when said judge means judges that each of said transmission packets passes the timing to be outputted from said receiving apparatus;

determination means for determining a transmission timing of each of said transmission packets so that said counted value does not exceed a fixed value; and

transmission means for transmitting said data according to the transmission timing determined at said determination means.

19. A data transmitting apparatus comprising:

transmission time stamp for generating transmission time stamp which is timing information which the receiving apparatus is to output each of said transmission packets; and wherein

said judge means judges that each of said transmission packets passes the timing to be outputted from the receiving apparatus, by using the value of said transmission time stamp of each transmission packet transmitted.

20. A data transmitting apparatus as recited in claim 18, wherein:

said determination means determines the transmission timing so as to transmit the transmission packet so that the counter takes as big value as possible in a range not exceeding a fixed value.

21. A data transmitting apparatus comprising:

calculation means for calculating delay time from the buffer size provided with in the receiving apparatus and the data rate of the data inputted to said receiving apparatus;

judge means for comparing said delay time with a designated value and judging;

transmission time stamp adding means for adding the input time to said receiving apparatus and the output of said judge means to each of said transmission packets as a transmission time stamp which is information of the timing which said receiving apparatus has to output said packet; and

transmission means for transmitting the packet added with said transmission time stamp;

at a transmitting apparatus transmitting the data inputted by a packet unit.

22. A data transmitting apparatus as recited in claim 21,

wherein:

said judge means outputs said designated value when the delay time is larger than a designated value and outputs said delay time when the delay time is smaller than said designated value.

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